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(71) Applicant (for all designated States except US): **C.R.F. SOCIETÀ CONSORTILE PER AZIONI** [IT/IT]; Strada Torino, 50, I-10043 Orbassano (IT).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **PULLINI, Daniele** [IT/IT]; c/o C.R.F. Società Consortile per Azioni, Strada

Torino 50, I-10043 Orbassano (Torino) (IT). **MAR-TORANA, Brunetto** [IT/IT]; c/o C.R.F. Società Consortile per Azioni, Strada Torino 50, I-10043 Orbassano (IT). **PERLO, Piero** [IT/IT]; Via Chichignolo, 19, I-12048 Sommariva Bosco (IT).

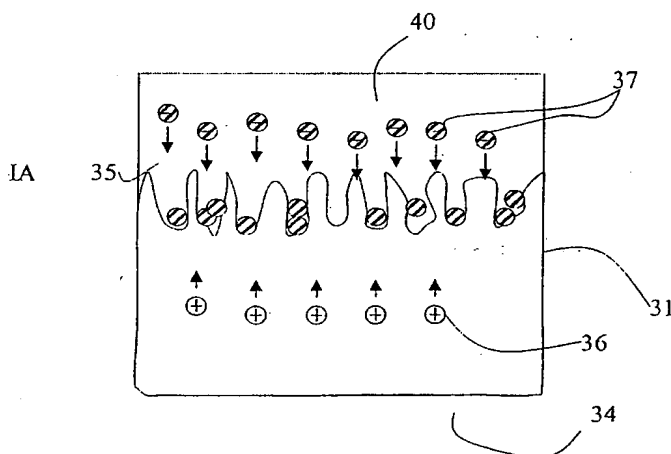
(74) Agents: **NOTARO, Giancarlo** et al.; Buzzi, Notaro & Antonielli d'Oulx S.r.l., Via Maria Vittoria 18, I-10123 Torino (IT).

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[Continued on next page]

(54) Title: METHOD FOR MANUFACTURING MAGNETIC FIELD DETECTION DEVICES AND DEVICES THEREFROM



(57) Abstract: A method for manufacturing magnetic field detection devices is described, said method comprising the operations of manufacturing a magneto-resistive element (10; 20) comprising regions with metallic conduction (13; 23) and regions with semi-conductive conduction (11; 31). Said method comprises the following operations: - forming metallic nano-particles (37) to obtain said regions with metallic conduction (13; 23); - providing a semiconductor substrate (31) to obtain a disordered mesoscopic structure. A magnetic device is also described, comprising a spin valve, said spin valve (110) comprising a plurality of layers (111, 112, 113, 114, 115, 116, 117) arranged in a stack which in turn comprises at least one free magnetic layer (111) able to be associated to a temporary magnetisation (MT), a spacer layer (113) and a permanent magnetic layer (112) associated to a permanent magnetisation (MP). The spacer element (113) is obtained by means of a mesoscopic structure of nanoparticles in a metallic matrix produced in accordance with the method for manufacturing magnetoresistive elements of the invention.

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